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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/717,149	11/21/2000	Makoto Saito	14083	1904

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EXAMINER
COLE, MONIQUE T

ART UNIT	PAPER NUMBER
1743	

DATE MAILED: 03/31/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/717,149	SAITO ET AL.	
	Examiner	Art Unit	
	Monique T. Cole	1743	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ____ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 November 2000* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7,10 and 11* is/are rejected.

7)☒ Claim(s) *8 and 9* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *3* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 5 & 11 are rejected under 35 U.S.C. 102(b) as being anticipated by USP 4,775,634 to Sienkiewicz (herein referred to as "Sienkiewicz").

Sienkiewicz teaches a method and apparatus for measuring dissolved organic carbon in water sample. The method comprises a closed oxidation chamber 10 wherein a water sample from a process feed line 12 and input valve14 is attached. A closed measuring chamber 16 is provided and is connected to oxidation chamber 16 by a gas loop. An ultraviolet lamp 46 and microprocessor are also components of the apparatus. An initial conductivity measurement is made with regard to the amount of inorganic content of the sample and then the UV light is activated. The organic matter is present in the sample water in the oxidation chamber is oxidized to carbon dioxide. This causes further conductivity changes in the sample in the measuring chamber. The change in conductivity that has occurred in the measuring chamber is measured and is proportional

to the total organic carbon concentration of the water sample. While it is noted that Sienkiewicz does not expressly teach that the relationship between the flow rate, the volume of the measuring chamber and the irradiation time is F=V/T, it is the Examiner's position that the disclosure of Sienkiewicz would embrace such a relationship, absent any evidence to the contrary.

3. Claims 1, 3, 4, 5, 7, 10 & 11 are rejected under 35 U.S.C. 102(e) as being anticipated by USP 6,444,474 to Thomas et al. (herein referred to as "Thomas").

Thomas teaches a method and apparatus for measurement of total organic carbon (TOC) that comprises a sample channel for receiving a water sample wherein the water sample can be irradiated with UV radiation to oxidize the organics to carbon dioxide (abstract). The method may also comprise a photocatalyst (abstract). The carbon dioxide generated by the UV irradiation of organics is detected using conductivity measurements. In a flow-cell configuration for conductivity measurement of TOC, sample is introduced into each flow path of the sample cell at a selected flow rate. The sample in the measurement channel is irradiated to mineralize the organics therein. The sample in the control path is not irradiated. Conductivity is measured near the end of the flow path and a comparison is made between the sample in the measurement path and the sample in the control path to exclude background conductivity. The flow rate is adjusted preferably to insure substantially complete mineralization of the measurement sample before it reaches the conductivity electrodes (col. 10, lines 50-62). The TOC measurement of the device can be employed as components in a feedback control system or alarm system to detect an

undesirable level of organics in a water supply or process line (presumably, this could be affected by a variation in UV light). See col. 17, lines 10-13.

With regard to the presence of a photometer to measure the amount of UV light from the UV light source, since the UV must be maintained at a wavelength of less than 400nm, one of ordinary skill in the art would find implicitly in the disclosure of Thomas that there is some means, such as a photometer, present to ensure the proper UV intensity (col. 14, lines 8-26). With regard to a means for confirming the rate of flow of the test liquid, the presence of flow controllers or regulators (col. 7, lines 64-66) would certainly meet this limitation, as such devices would possess some indication of the fluid pressure, even if it is no more than confirming whether the fluid pressure is off or on.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 2 & 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thomas.

Thomas teaches the invention substantially as claimed with the exception of expressly teaching increasing the rate of flow at which the test liquid passes through the oxidizing vessel after the maximum conductivity is measured.

However, Thomas clearly does disclose adjusting the flow rate for a variety of reasons to include insuring the complete mineralization of the measurement sample & to facilitate the passage of water through the sample channel. In order to achieve greater efficiency in testing numerous water samples, it would have been obvious to one having ordinary skill in the art to increase the flow rate of the water sample after the TOC conductivity measurement had been performed to more quickly move the sample out of the way so that another water sample could be introduced into the sample cell.

Allowable Subject Matter

7. Claims 8 & 9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. The following is a statement of reasons for the indication of allowable subject matter: the prior art does not teach that the apparatus includes an oxidizing process vessel which is an annular reactor with an inner UV transparent tube surrounding the UV light source, with test liquid passing through the annular space.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Monique T. Cole whose telephone number is 703-305-0447. The examiner can normally be reached on Monday-Thursday from 6:30 A.M. to 4:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on 703-308-4037. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-306-0661.

Monique T. Cole
Examiner
Art Unit 1743

MC MC
March 24, 2003

Jill Warden
Supervisory Patent Examiner
Technology Center 1700